nemesysco
voice analysis technologies

White Paper

Insurance Fraud Prevention with Voice Analysis

Introduction

A tremendous amount of money is lost yearly due to fraudulent claims made to insurance companies. In order to control costs, insurance companies have found it necessary to investigate fraud for the benefits of their policy holders. The purpose of this white paper is to discuss how voice analysis technologies can effectively minimize the extent of insurance fraud.

Background

Nemesysco has been successfully operating in the insurance market since 2001, providing its customers with technology solutions for fraud detection and risk assessment.

Our voice analysis solutions enable to determine the veracity of a claim call in real-time, providing risk assessment by emotion detection and analysis, identifying honest claim calls and separating them from high risk calls which require in-depth investigation.

Separating the honest claims allows forwarding them to a fast track for immediate settlement. This enhances customer satisfaction and retention by ensuring their honest claims are dealt with and paid out in the fastest way possible.

Nearly six and a half million people, or 14% of Great Britain's adult population, personally know someone who has committed insurance fraud, according to figures. And almost one in four people, or 23% of the adult population, think that making a false insurance claim is understandable, acceptable, proper, or even praiseworthy, says the **Saga Insurance Fraud Survey, carried out by Gallup**.

The Coalition Against Insurance Fraud estimates the loss to be $80 billion per year and Medicare estimates fraud in its system costs the government $179 billion per year

In the United States insurance fraud is estimated to cost US$875 per person per year with **The Coalition Against Insurance Fraud** estimating the loss to be $80 billion per year and **Medicare** estimating fraud in its system costs the government $179 billion per year.

Challenge

The rate of fraudulent claims is estimated at 20% worldwide. The issue is much more complex than being just a financial and economic problem. Moral and educational issues point to the fact that many insurance fraudsters do not see their acts of deceit as being dishonest because they see the insurance companies as being a faceless victim. In some cases, policy holders actually feel that cheating insurance companies is morally justifiable.

The rate of fraudulent claims is approximately 20% worldwide

The cost of fraud is not absorbed by insurance companies but it is passed on to the consumer, i.e., the policy holder, who is then compelled to pay a higher premium for insurance. As insurance rates increase, consumers look for a different insurance carrier, with better prices and the company's customer base shrinks.

Solution

Nemesysco's **LVA (Layered Voice Analysis) for Insurance Fraud Prevention** combines conversation management and behavioral analysis skills on the one hand, and the LVA technology on the other hand.

It is composed of two key products: **RA5** is used by the claim recipient at the initial phase of recognizing and differentiating honest claims from high risk claims. **LVA 6.50**, is used for online and offline thorough investigation by a company's SIU (special investigation unit).

Nemesysco's patented LVA technology, which stands in the core of this solution, is a security-level technology designed for truth verification and the detection of deceit.

LVA Technology:

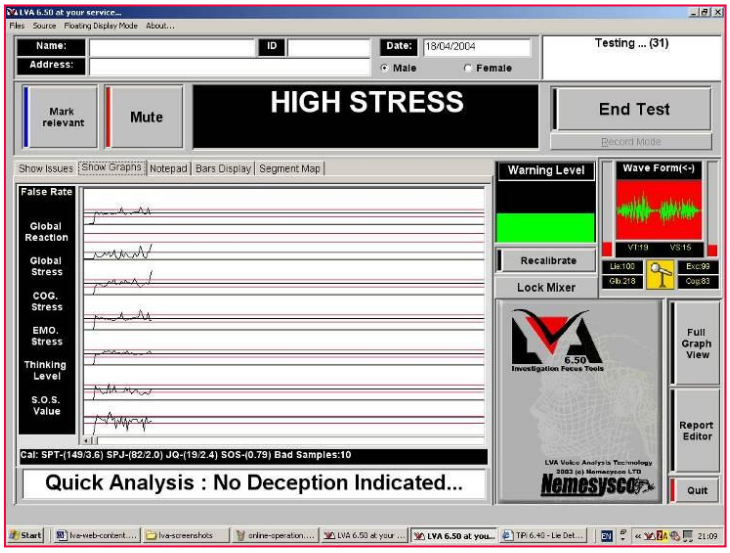
LVA technology identifies a subject's state-of-mind by analyzing key vocal properties in his/her speech

- Identifies a subject's state-of-mind by analyzing key vocal properties in his/her speech
- Identifies various types of stress, cognitive processes and emotional reactions
- Creates an "emotional signature" of an individual's speech at a given moment
- Detects deceptive motivation, criminal intention, and general credibility by identifying key emotional signatures reflected in the voice

Nemesysco's solution is intended for risk assessment and fraud prevention in the following phases of the insurance carrier – policy holder relationship:

1. Preparation or Renewing of Policy
   Conduct a risk assessment and screening in order to avoid in advance issuing policies for high risk customers
2. Claim Submission and Processing
   - Initial screening providing an almost automatic decision
   - Primary investigation assisting a trained staff member to reach a decision
   - Secondary investigation where professional investigators conduct an in-depth examination offline in order to solve the case and achieve a much higher defeat rate

Appropriately positioned in the claims department of insurance companies, RA5 is a two stage process that can also go to a third level, using the LVA 6.50, if the findings warrant (i.e., further investigation by the SIU or outsourcing to a private investigator).

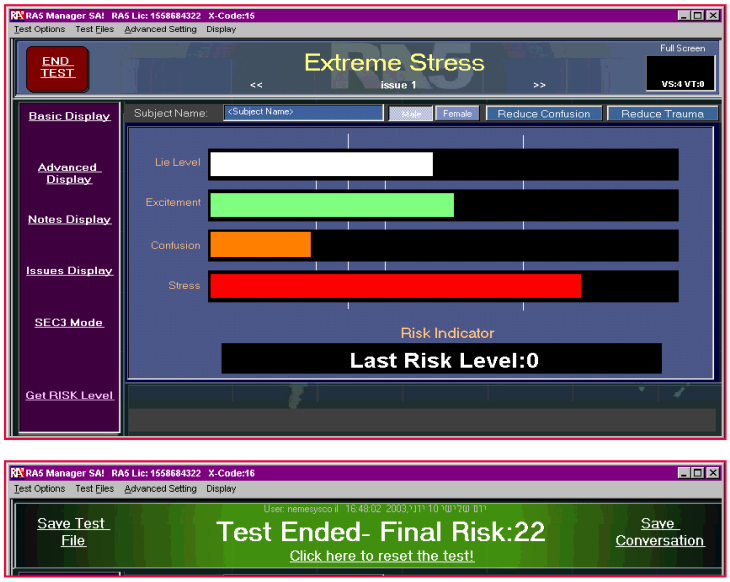


LVA 6.50 sample screen

Solution Principles and Workflow:

The recipient of the claim, usually a telephone operator, is referred to as a **Front Line Investigator**, after having undergone appropriate training and having acquired basic skills in the field of fraud detection. This is in direct contrast to the operator's current status as an unskilled part time worker with a high rate of turnover.

Once the initial uninterrupted narrative has been heard, the front line investigator commences questioning and probing the claimant in order to get a “minds eye” of the incident. All claimant responses will be accorded a **Lie Stress** (L-S) score and depending on whether the score is within pre defined normal and accepted boundaries, a **Question Cluster** (QC) will appear on the front line investigator's screen. This QC is used to guide the investigator in his/her interview. L-S scores will be agreed upon in discussions between the insurance carrier and Nemesysco. Deviation from the L-S score will activate the QC for that specific topic. Topics can be car keys, alarm activation, past claims, insurance carrier refusals, etc.



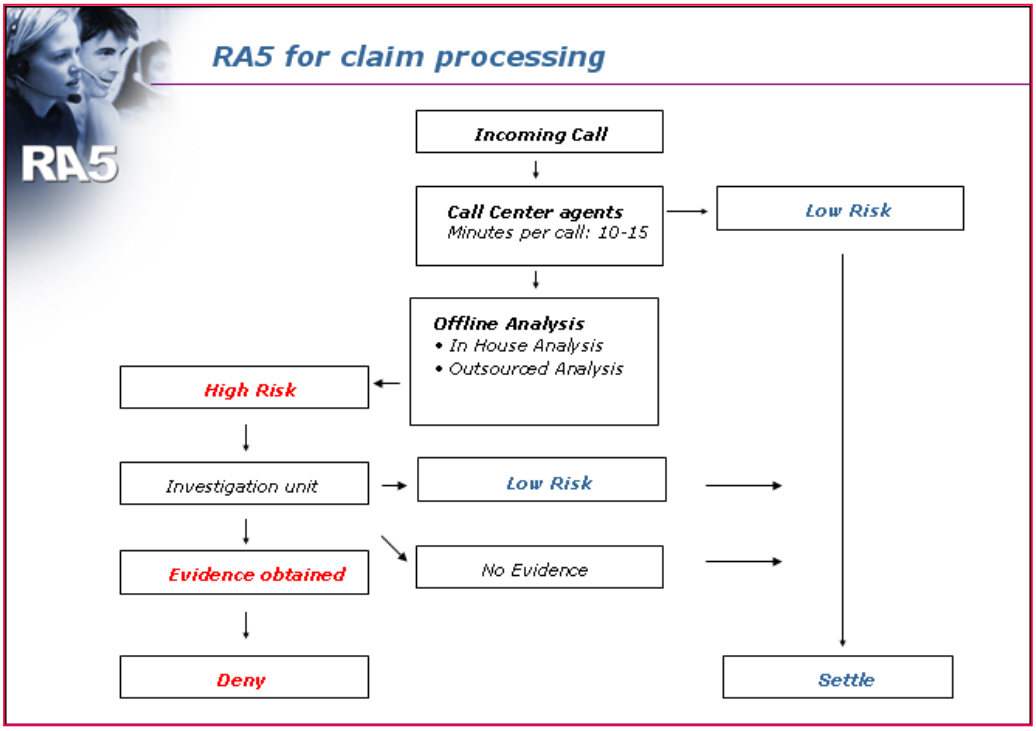
RA5 sample screen

1. The call is taken by a trained operator (LVA online training together with interviewing techniques), and the caller's voice is calibrated, for example by asking for the policy holder’s personal information.
2. The claimant is asked to give an uninterrupted narrative of the event(s) that took place.
3. The operator sketches out a time line and data bins, while listening to the conversation and receiving initial indications from the RA5 software.
4. The operator goes back to the beginning of the narrative and starts asking probing questions.
5. The L-S paradigm determines which question clusters will open and guide the operator in the interview.
6. At the end of the interview, the operator uses the software generated quick analysis score, e.g., low risk (green), medium risk (amber), and high risk (red), regarding the relevant questions in the interview (after the narrative). This is the primary investigation phase.
7. Real-time comparison is made after the interview between responses to questions and the information initially received and recorded on the time line and in the data bins.
8. Together with the scores from #6 and from #7, an initial determination is made.
9. Green results (Low Risk) claims are fast tracked for payment.
10. Red and Yellow results (High or Medium Risk) claims are sent to the supervisor (secondary investigation) who will analyze the conversation in an offline mode and construct a more individual questionnaire concerned with the issues that pose a credibility problem.

Green results (Low Risk) claims are fast tracked for payment

Red results (High Risk) claims are sent to the supervisor

11. The claimant is then called back by the SIU investigators, which use a more structured interview model (reserved for suspects) as opposed to the open-ended narrative which took place in the earlier stages.



Operation of the LVA for Insurance Fraud Prevention solution necessitates undergoing a training program. The front line investigator will take part in three days of intensive training while supervisors and site managers will also participate in an additional training of three days.

At the end of the training program, participants will receive a comprehensive handbook that will guide the interviewer through the various stages of the investigation and will be used as a reference text, whenever there is a doubt about anything in the investigative process.

Benefits

- Save money by detecting more false claims
- Gain more customers by lowering premium costs
- Increase customer satisfaction and improve company positioning by rapidly treating honest customers
- Identify fraudulent customers at the time of insurance underwriting
- Deter potential customers with deceitful intentions in advance
- Dismiss claims in court focusing on problematic issues shown in the investigation
- Improve employees' satisfaction and reduce turn-over

Testimonials

Howard Posner, Chief Executive Officer, **Halifax General Insurance**, said: "It is totally inappropriate that honest customers pay for the small number of dishonest ones. If the number of fraudulent claims can be reduced this will also help to keep premium levels low in the future for our honest customers."

Gordon Hannah, Head of Claims, **Esure** said: "Esure believes in this technology and we believe it can cut fraud. We want to reward honest claimants with faster service and lower premiums, so we consider this technology an important step. Voice Risk Analysis cannot disadvantage a genuine claimant; it will only ever speed up their claim. It will, however, provide an indicator of potentially fraudulent claims and can help direct the search for concrete evidence of fraud. If none is found, the claim will be paid as with any other".

Highway Insurance press release: Highway was the first UK insurer to begin using the Voice Risk Analysis technology to screen claims in 2002. Over the past three years the Voice Risk Analysis process has also generated additional benefits for Highway including:

- 19% reduction in the costs associated with outsourced investigations
- Greater job satisfaction – with a corresponding reduction of staff turnover in the Customer Contact Centre from 33% annually, to 9%
- A significant reduction of 50% in complaints received

Lie detectors cut car theft claims by 25%

Press Association, October 30 2003: Lie detectors cut car theft claims by 25%. Car insurer Admiral today said its use of lie detectors had led to a quarter of policyholders withdrawing claims over vehicle theft.

Summary

LVA for Insurance Fraud Prevention is designed to enable insurance companies prevent fraud, save money and increase customer satisfaction by easily and effectively detecting and compensating honest claims while at the same time directing high risk fraudulent claim calls for investigation. The purpose of this solution is to assist an insurance company to get a more accurate picture of the scope of fraudulent claims it receives, provide it with necessary tools to prevent these fraud attempts and deter potentially deceitful customers.